

ACCESS SERVICE

16. Public Packet Data Network

Public Packet Data Networks utilize separate data networks, comprised of switching and transmission facilities. The networks provide for the transfer of data provided by a customer in a frame format. The data is separated into discrete segments for transmission through the public packet data network.

16.1 Frame Relay Access Service16.1.1 General(A) General

Frame Relay Access Service (FRAS) is a medium-speed, connection-oriented packet-switched data service that allows for the interconnection of Local Area Networks (LANs) or other compatible customer premises equipment for the purpose of connecting to an interstate frame relay network. FRAS also allows for the interconnection of a customer designated premises to a DSL Access Service Connection Point as described in Section 8, preceding. The terminal equipment accumulates the customer data and puts it into a frame relay format suitable for transmission over the FRAS network. This terminal equipment must conform to American National Standards Institute and Telecommunication Standardization Bureau of the International Telecommunication Union (ITU- T), formerly Committee Consultant de International Telegraphique et Telephonique (CCITT), standards.

FRAS permits customers to share network bandwidth for data transmissions.

Rates and charges for FRAS are set forth in 17.4.8.1 following. The application of rates for FRAS is described in 16.1.2 following.

In addition to the regulations and charges specified in this section, the general regulations and charges specified in other sections of this tariff apply as appropriate.

(B) Service Description

FRAS is a transport service that facilitates the exchange of variable length information units (frames) between customer connections. Frames travel a fixed path through the network with an address that specifies the permanent virtual connection. Addresses are read by the network processor and the frames are relayed to the preassigned destination.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.1 General (Cont'd)(B) Service Description (Cont'd)

FRAS service includes: the Frame Relay Access Connection, the Frame Relay Inter-network Connection, and Permanent Virtual Connections (PVC) which have associated Committed Information Rates (CIRs).

The Frame Relay Access Connection and the Frame Relay Inter-network Connection elements provide access to a Telephone Company wire center equipped with a frame relay switch. A generic view of FRAS access is shown in 16.1.2(A) following. Frame Relay Access Service connections are available from the wire centers as identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF F.C.C. No. 4.

The Frame Relay Access Connection combines a frame relay compatible 56.0 kbps, 64.0 kbps, 1.544 Mbps or 44.736 Mbps digital transport facility with a port on a frame relay switch. The Frame Relay Access Connection includes the Telephone Company facility between the customer designated premises and the customer's serving wire center, the interoffice transport (if applicable) between the customer's serving wire center and a wire center equipped with a frame relay switch, and the end user port. The end user port is a user-to-network interface which provides the lineside physical entry point into the Telephone Company frame relay network and permits FRAS compatible end user customer premises equipment (CPE) to originate or terminate an interstate access service. Connections between end user customer premises equipment and the Telephone Company frame relay switch are available at speeds of 56.0 kbps, 64.0 kbps, 1.544 Mbps or 44.736 Mbps. Each end user port requires the identification of a corresponding terminating port. All end user ports must be in conformance with American National Standards Institute (ANSI) standards T1.606-1990, T1.606 Addendum 1-1991, T1.606a-1992, T1.617, Annex D-1992.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.1 General (Cont'd)(B) Service Description (Cont'd)

The Frame Relay Inter-network Connection combines a frame relay compatible 1.544 Mbps or 44.736 Mbps digital transport facility with a port on a frame relay switch. The Frame Relay Inter-network Connection includes the Telephone Company facility between the customer designated premises and the customer's serving wire center, the interoffice transport (if applicable) between the customer's serving wire center and a wire center equipped with a frame relay switch, and the inter-network customer port. The inter-network customer port is a network-to-network interface which provides the trunkside physical entry point into the Telephone Company frame relay network. The inter-network customer port connects the Telephone Company frame relay switch and the access customer's network. The inter-network customer port is offered at speeds of 1.544 Mbps or 44.736 Mbps. All inter-network customer ports must be in conformance with ANSI standards T1.606b-1993 and Telcordia Technologies, Inc. Technical Reference TR-TSV-001370, Issued: May 1993.

The Telephone Company will provide the logical circuits required within its frame relay network to connect the ports or to connect a port with a DSL Access Service Connection Point. These logical circuits, or Permanent Virtual Connections (PVC), are software defined, end-to end, bi-directional communications paths that are established and dis-established via the access service order process. While no physical circuits are dedicated, the two network addresses (one from each port) are connected electronically to form a PVC.

There are two types of PVCs available. The standard PVC establishes a communications path between two ports or between a port and a DSL Access Service Connection Point within the same Telephone Company frame relay network.

The extended PVC establishes a communications path between two ports or between a port and a DSL Access Service Connection Point on two interconnected Telephone Company frame relay networks. A generic view of interconnected FRAS is shown in 16.1.2(A) following.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.1 General (Cont'd)(B) Service Description (Cont'd)

At the time service is ordered the number of PVCs will be identified along with their Committed Information Rates. CIR is the bit rate at which the FRAS network commits to transfer data. Committed Information Rates provide for frame relay switch throughput at designated speeds (See 16.1.2(A)(3) following). This information is required for network routing purposes.

(C) Service Provided by More than One Telephone Company

When the transport facility between the customer designated premises and a wire center equipped with a frame relay switch is provided by more than one Telephone Company, the Telephone Companies involved will provide a Special Access Service facility as set forth in Section 7 preceding, and in accordance with Sections 2.4.7 and 5.3 preceding.

Jointly-Provided FRAS service includes: the End User Port, the Inter-network Customer Port, and Permanent Virtual Connections (PVC) which have associated Committed Information Rates (CIRs). A Special Access Service facility is used to connect to the frame relay switch.

Connections are provided via Channel Termination(s) and Channel Mileage (See Section 7 Special Access Digital Data and High Capacity Services preceding). All regulations, rates and charges as specified in Section 7 will apply in addition to the rates and charges associated with FRAS. A generic view of jointly-provided FRAS is shown in 16.1.2(A) following.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)

16.1 Frame Relay Access Service (Cont'd)

16.1.1 General (Cont'd)

(C) Service Provided by More than One Telephone Company (Cont'd)

The Telephone Company that provides the frame relay switch will bill an End User Port charge for the end user port connection and/or an Inter-network Customer Port charge for the inter-network customer port connection.

The Special Access Service, End User Port and/or Inter-network Customer Port charge(s) will apply in lieu of the Frame Relay Access Connection or Frame Relay Inter-network Connection.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.1 General (Cont'd)(D) Ordering Options and Conditions

Frame Relay Access Service is ordered under the Access Order provisions set forth in Section 5 preceding. Also included in that section are other charges which may be associated with ordering FRAS (e.g., Service Date Change Charges, Cancellation Charges, etc.)

A minimum of two FRAS connections are required for data to be transported between customer designated premises.

(E) Acceptance Testing

At no additional charge, the Telephone Company will, at the customer's request, cooperatively test at the time of installation.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations

This section contains the specific regulations governing the rates and charges that apply for Frame Relay Access Service.

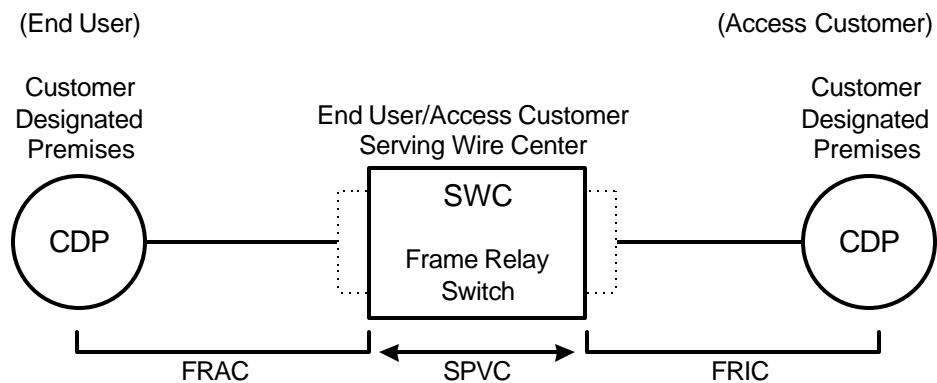
Frame Relay Access Service is available at the wire centers as identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF F.C.C. No. 4. In the case of Interconnected Frame Relay Access Service, NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF F.C.C. NO. 4 also identifies the intermediate and super intermediate wire centers.

(A) Rate Categories

The following diagrams depict a generic view of the components of Frame Relay Access Service and the manner in which the components are combined to provide FRAS, Interconnected FRAS, and Jointly -Provided FRAS.

Frame Relay Access Service

Customer's Serving Wire Center is equipped with a frame relay switch

RATE ELEMENTS

FRAC = Frame Relay Access Connection
 SPVC = Standard Permanent Virtual Connection
 FRIC = Frame Relay Inter-network Connection

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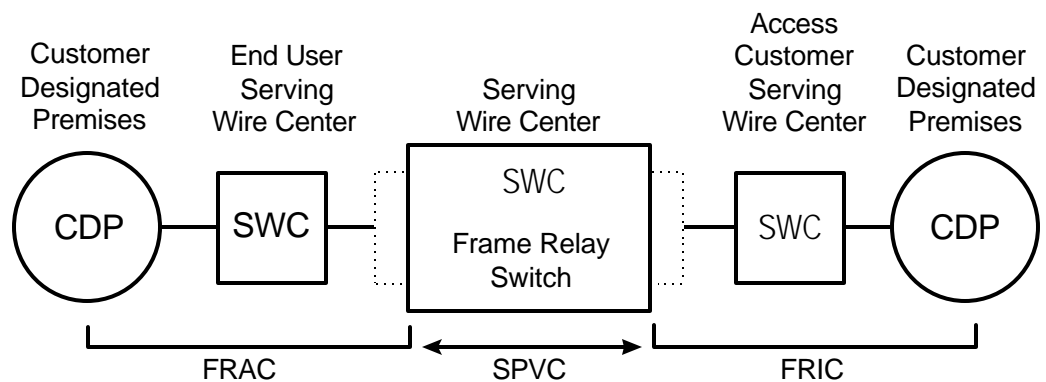
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ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(A) Rate Categories (Cont'd)

Frame Relay Access Service

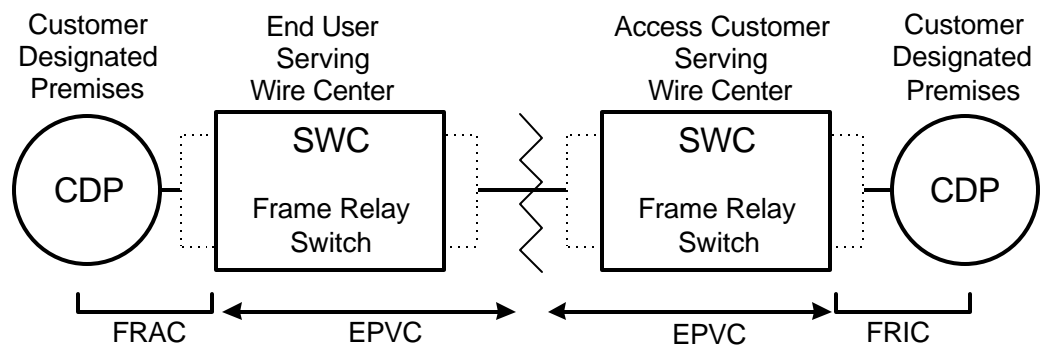
Customer's Serving Wire Center is not equipped with a frame relay switch



Interconnected Frame Relay Access Service

EC A *

EC B *

RATE ELEMENTS

FRAC = Frame Relay Access Connection

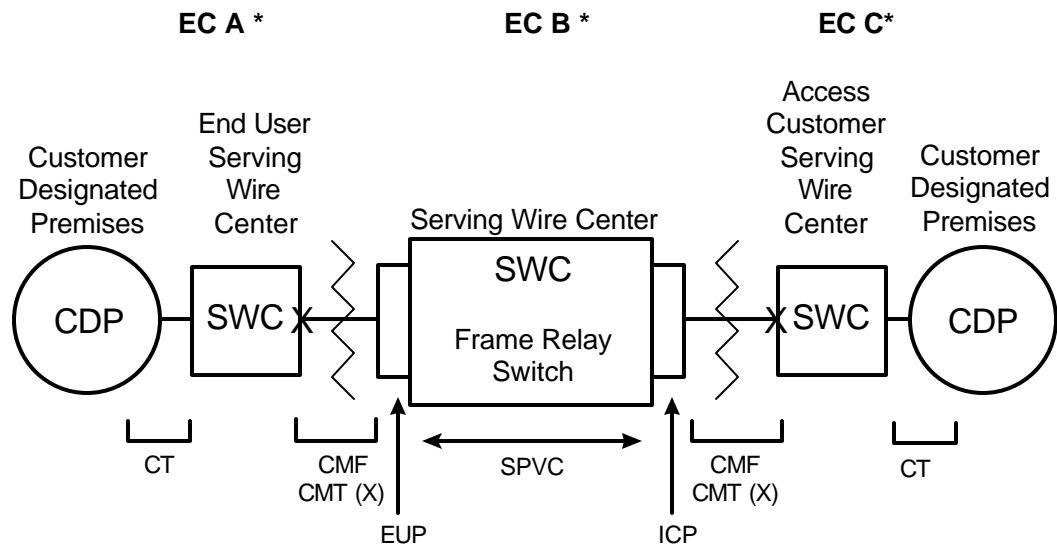
EPVC = Extended Permanent Virtual Connection

FRIC = Frame Relay Inter-network Connection

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(A) Rate Categories (Cont'd)

Jointly-Provided Frame Relay Access Service



RATE ELEMENTS

(Special Access Service)

(Frame Relay Access Service)

EC "A" CT = Channel Termination
CMT = Channel Mileage Termination
CMF = Channel Mileage Facility

EC "B" CMF = Channel Mileage Facility
CMF = Channel Mileage Facility

EUP = End User Port
SPVC = Standard Permanent Virtual Connection
ICP = Inter-network Customer Port

EC "C" CT = Channel Termination
CMT = Channel Mileage Termination
CMF = Channel Mileage Facility

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ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(A) Rate Categories (Cont'd)(1) Frame Relay Access Connection

The Frame Relay Access Connection (FRAC) rate element recovers the costs associated with the communication path between the end user's premises and the Telephone Company wire center equipped with a frame relay switch. The FRAC includes the physical transmission facility between the customer designated premises and the customer's serving wire center, the interoffice transport (if applicable) between the customer's serving wire center and a wire center equipped with a frame relay switch, and the end user port on the Telephone Company's frame relay switch.

One FRAC charge applies per customer designated premises at which the FRAS connection is terminated. This applies even if the customer designated premises and the frame relay switch are collocated in a Telephone Company building.

(2) Frame Relay Inter-network Connection

The Frame Relay Inter-network Connection (FRIC) rate element recovers the costs associated with the communication path between the access customer's premises and the Telephone Company wire center equipped with a frame relay switch. The FRIC includes the physical transmission facility between the customer designated premises and the customer's serving wire center, the interoffice transport (if applicable) between the customer's serving wire center and a wire center equipped with a frame relay switch, and the inter-network customer port on the Telephone Company's frame relay switch.

One FRIC charge applies per customer designated premises at which the FRAS connection is terminated. This applies even if the customer designated premises and the frame relay switch are collocated in a Telephone Company building.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(A) Rate Categories (Cont'd)(3) End User Port

An End User Port charge is applied as a discrete rate element in conjunction with jointly-provided Special Access Service. Refer to 7.9 and 7.10 preceding for additional applicable rates and charges.

The End User Port is the physical location in the Telephone Company switching office where the transport facility of the customer connects to the FRAS Network. It specifies how a frame relay switch sends and receives data from a frame relay end user customer's LAN or other compatible CPE devices.

The End User Port consists of either a 56.0 kbps, 64.0 kbps, 1.544 Mbps or 44.736 Mbps interface. The port connecting the transport facility to the Telephone Company frame relay switch must be ordered and provided at the same speed as the associated transport facility.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(A) Rate Categories (Cont'd)(4) Inter-network Customer Port

An Inter-network Customer Port Charge is applied as a discrete rate element in conjunction with jointly -provided Special Access Service. Refer to 7.10 preceding for additional applicable rates and charges.

The Inter-network Customer Port is the physical location in the Telephone Company switching office where the access customer's transport facility connects to the Telephone Company's FRAS network. It specifies how a frame relay switch sends and receives data from a frame relay access customer's network.

The Inter-network Customer Port is offered at speeds of 1.544 Mbps or 44.736 Mbps. The port connecting the transport facility to the Telephone Company frame relay switch must be ordered and provided at the same speed as the associated transport facility.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(A) Rate Categories (Cont'd)(5) Permanent Virtual Connection (PVC)

A PVC is a software defined communications path between two port connections or between a port connection and a DSL Access Service Connection Point.

Each PVC is provisioned with a customer selected Committed Information Rate. The CIR is a transmission speed specified by the customer. CIRs range from 8 kbps to 768 kbps. The Telephone Company will provide switch capacity to permit the customer to transmit information with guaranteed delivery at the specified CIR. The Telephone Company will permit customers to attempt to transmit at speeds up to two times the CIR with no guarantee of completion. Attempted transmissions at above two times the CIR will not be permitted.

Customers will be permitted to order multiple PVCs on a given port subject to switch limitations. Customers anticipating non-simultaneous transmission may order CIRs assigned to these multiple PVCs, the sum of which may theoretically exceed the actual throughput of the port. However, when simultaneous transmission of multiple PVCs occurs, the total of the transmission rate (CIRs) may not exceed the actual throughput of the port.

There are two types of PVCs available. The standard PVC establishes a communications path between two ports or between a port and a DSL Access Service Connection Point within the same Telephone Company frame relay network. The extended PVC establishes a communications path between two ports or between a port and a DSL Access Service Connection Point on two interconnected Telephone Company frame relay networks.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(B) Types of Rates and Charges

There are two types of rates and charges. They are monthly rates and nonrecurring charges. The rates and charges are described as follows:

(1) Monthly Rates

Monthly rates are recurring rates that apply each month or fraction thereof that a FRAS is provided. For billing purposes, each month is considered to have 30 days.

(2) Nonrecurring Charges

Nonrecurring charges are one-time charges that apply for specific work activity (i.e., installation or change to an existing service). The types of nonrecurring charges that apply for FRAS are: installation of service and service rearrangements. These charges are in addition to the Access Order Charge as specified in 17.4.1 following:

(a) Installation of Service

Nonrecurring charges apply for the installation of Frame Relay Access Connections (FRAC), Frame Relay Inter-network Connections (FRIC), and Permanent Virtual Connections (PVC).

A nonrecurring charge applies per FRAC or FRIC installed and is based on the speed of the connection.

A nonrecurring charge applies per PVC installed.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(B) Types of Rates and Charges (Cont'd)(2) Nonrecurring Charges (Cont'd)(b) Service Rearrangements

Service Rearrangements are changes to existing (installed) services.

A PVC Rearrangement Charge will be applied whenever a change is made to the CIR of an existing PVC after initial port installation and/or a change is made to the terminating port destination of the PVC.

Administrative changes will be made without charge(s) to the customer. Administrative changes are as follows:

- Change of customer name,
- Change of customer or customer's end user premises address when the change of address is not a result of physical relocation of equipment,
- Change in billing data (name, address, or contact name or telephone number),
- Change of agency authorization,
- Change of customer circuit identification,
- Change of billing account number,
- Change of customer or customer's end user contact name or telephone number, and
- Change of jurisdiction.

(c) Moves

A move involves a change in the physical location of one of the following:

- The Point of Termination at the customer's premises
- The customer's premises

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.2 Rate Regulations (Cont'd)(c) Moves (Cont'd)

The charges for the move are dependent on whether the move is to a new location within the same building or to a different building.

(i) Moves Within the Same Building

When the move is to a new location within the same building, the charge for the move will be an amount equal to one half of the nonrecurring (i.e., installation) charge for the service termination affected. There will be no change in the minimum period requirements. This charge is in addition to the Access Order Charge as specified in 17.4.1 following.

(ii) Moves To a Different Building

Moves to a different building will be treated as a discontinuance and start of service and all associated nonrecurring charges will apply. New minimum period requirements will be established for the new services. The customer will also remain responsible for satisfying all outstanding minimum period charges for the discontinued service.

(C) Minimum Period

The minimum period for FRAS is one month and the full monthly rate will apply to the first month. Adjustments for quantities of services established or discontinued in any billing period beyond the minimum period are as set forth in 2.4.1(F) preceding.

The minimum period for discounted FRAS is twelve months as set forth in 2.4.2 and 5.5.1 preceding.

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ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.3 Optional Rate Plans

A Term Discount plan is available for Frame Relay Access Service (FRAS). The Term Discount applies to the Frame Relay Access Connection and Frame Relay Inter-network Connection charges. The End User Port and Inter-network Customer Port charges are eligible for term discounts where the associated Special Access Service facility is eligible for a Special Access Service Term Discount. The conditions under which End User Port and Inter-network Customer Port Term Discounts apply are specified in 7.2.8(A)(1) preceding while the Term Discount percentage is as set forth in 17.4.8(A)(5) following. The Permanent Virtual Connections (PVC) are not eligible for a Term Discount. Under the Term Discount plan, the current monthly rates for eligible services are reduced by a fixed percentage. The amount of the discount percentage differs based on the length of the service commitment period selected by the customer. The Term Discount percentages for FRAS are as set forth in 17.4.8(A)(5) following.

Discounts for the Term Discount plan are only applied to FRAS provided to a customer within the same state and LATA by the same Telephone Company.

The Term Discount Optional Rate Plan is only available from those Telephone Companies listed in 17.3.10(A)(1) following.

The minimum service period on a month-to-month basis is one month. Under an Optional Rate Plan, the minimum service period is twelve months.

(A) Term Discounts

FRAS may be ordered at the customer's option on a month-to-month basis or for Term Discount periods of 36 months (3 years) or 60 months (5 years).

The minimum service period for all Term Discount plans is twelve months. The customer must specify the length of the service commitment period at the time the service is ordered.

For customers that subscribe to the Term Discount plan for 36 or 60 months, the Term Discount percentage as set forth in 17.4.8(A)(5) following will be frozen from Company initiated decreases for the entire discount period at the percent in effect at the beginning of the Term Discount period.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.3 Optional Rate Plans (Cont'd)(A) Term Discounts (Cont'd)

If a Term Discount Percentage increase occurs during the term of an existing Term Discount plan, the increased percentage will be applied automatically to the remainder of the current Term Discount period.

At the end of the Term Discount period, the customer may convert to month-to-month service or subscribe to a new Term Discount plan. If the customer does not make a choice by the end of the discount period, the rates will automatically convert to month-to-month service rates.

To be included in a Term Discount plan, all eligible FRAS rate elements must be ordered for the same commitment term (i.e., all 36 months or all 60 months) and with the same service date. When additional capacity is subsequently added, it will be available only on a month-to-month basis unless the discount period of the entire service is upgraded.

Eligible FRAS rate elements are those provided to a customer within the same state and LATA by the same Telephone Company. As long as the number of FRAS connections included in a Term Discount plan remains constant, customer requests to install and disconnect FRAS connections, including changes affecting different wire centers and/or customer designated premises, will not change the current Term Discount period or the minimum service period, and Discontinuance of Service charges as set forth in (3) following will not apply.

(1) Upgrades in Term Discounts

Services provided under month-to-month rates or Term Discount rates may be upgraded to a Term Discount plan at any time without incurring FRAS nonrecurring charges or discontinuance charges for existing services. The new Term Discount plan must meet or exceed the service term of the plan being upgraded. For example, a service with a 36 month commitment period may be upgraded to a new 36 month or 60 month service period. The monthly rates will be those that are in effect at the time the service is upgraded. A new minimum service period applies to all FRAS that is upgraded.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.3 Optional Rate Plans (Cont'd)(A) Term Discounts (Cont'd)(2) Upgrades in Capacity

If the customer chooses to upgrade a service under the Term Discount plan to a higher capacity (e.g., from 56.0 kbps to 64.0 kbps or from 56.0 kbps or 64.0 kbps to 1.544 Mbps), discontinuance charges will not apply, provided all the following conditions are met:

- the customer's order for the disconnect of the existing service and the installation of the new service are received at the same time and specifically reference the application of upgrade in capacity,
- the customer's disconnect order for the existing service must reference the service installation order,
- the new service has a total capacity greater than the total capacity of the service being discontinued and,
- the new Term Discount period meets or exceeds the Term Discount period being discontinued.

A new minimum service period applies to all upgrades. A Frame Relay Access Connection nonrecurring charge for an equivalent capacity of the existing services being upgraded to the higher speed service will not be assessed. FRAC nonrecurring charges will not apply to the upgraded lower speed services placed on the higher speed service if requested at the same time as the upgrade request. Nonrecurring charges will apply for capacity that exceeds the existing equivalent capacity.

ACCESS SERVICE

16. Public Packet Data Network (Cont'd)16.1 Frame Relay Access Service (Cont'd)16.1.3 Optional Rate Plans (Cont'd)(A) Term Discounts (Cont'd)(2) Upgrades in Capacity (Cont'd)

Discontinuance charges will not apply should the customer choose to upgrade either a portion of or the entire FRAS under the Term Discount plan and move the service to a new customer location(s) within the same state and LATA where service is provided by the same Telephone Company.

(3) Discontinuance of Service

If the customer chooses to disconnect all or a portion of the service prior to the expiration of the Term Discount period, discontinuance charges will apply to the portion of the service being discontinued.

Should the customer choose to discontinue a Term Discount plan prior to the completion of the minimum service period, discontinuance charges will apply. Discontinuance charges equal to one-hundred percent of the total undiscounted monthly rates, less any amounts previously paid, will apply for the minimum service period. Additionally, discontinuance charges of fifteen percent of the total undiscounted monthly charges will apply to the remaining portion of the discount service term.

Should the customer choose to discontinue service ordered under a Term Discount plan after the minimum service period but before the completion of the discount period, discontinuance charges will apply. Discontinuance charges of fifteen percent of the total undiscounted monthly charges will apply to the remaining portion of the discount period. For example, a customer has a 1.544 Mbps Frame Relay Access Connection which it chooses to discontinue after 33 months into a 60-month service term. The discontinuance charge would be 0.15 times 27 months times the undiscounted monthly rates for that service.